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ABSTRACT

This study was conducted to investigate the relationship between computer-related stress, somatic complaints, and computerphobia. Subjects were 109 graduate and undergraduate college students who completed a questionnaire which consisted of questions on demographic data; exposure to computer information; the Computer Technology Hassles Scale to measure computer-related stress; somatic complaint items from the Hopkins Symptom Checklist; and Rosen, Sears, and Weil's (1987) measures of computerphobia: Computer Anxiety Rating Scale, Attitudes Toward Computers Scale, and Computer Thoughts Scale. Based on correlational analyses, the results indicated that the Computer Technology Hassles Scale was significantly correlated with somatic complaints (r=.35), years used a computer (r=.27), and self-rated computer knowledge (r=.28). The Computer Technology Hassles Scale was not significantly correlated with the measures of computerphobia: Computer Anxiety Rating Scale (r=.18), Attitudes Toward Computers Scale (r=-.08), and Computer Thoughts Scale (r=-.05). Evidence supports the conclusion that computer-related stress is distinct from computerphobia. (NB)

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Comparing Computer-Related Stress to Computerphobia[1]

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ABSTRACT

The relationship between computer-related stress, somatic complaints, and computerphobia was investigated. A questionnaire requested the following information: demographic data, exposure to computer information, computer-related stress, measured by the Computer Technology Hassles Scale, somatic complaint items of the Hopkins Symptom Checklist, and Rosen, Sears, & Weil's (1987) measures of computerphobia: Computer Anxiety Rating Scale, Attitudes Toward Computers Scale, and Computer Thoughts Scale. A total of 109 students responded to the questionnaire. Based on correlational analyses, the results indicated that the Computer Technology Hassles Scale was significantly correlated with somatic complaints ($r = .35$), years used a computer ($r = .27$), and self-rated computer knowledge ($r = .28$). The Computer Technology Hassles Scale was not significantly correlated with the measures of computerphobia: Computer Anxiety Rating Scale ($r = .18$), Attitudes Toward Computers Scale ($r = -.08$), and Computer Thoughts Scale ($r = -.05$). Evidence supports the conclusion that computer-related stress is distinct from computerphobia.

Hudiburg (1989a) developed a measure of computer-related stress, the Computer Technology Hassles Scale. The scale was shown to be related to a global measure of stress (Cohen, Kamarck, & Mermelstein, 1983), but relatively independent of attitudes toward computer technology (Nickell & Pinto, 1986). In a second study, Hudiburg (1989b) revised the Computer Technology Hassles Scale and found that the scale was related to global stress and somatic complaints. The scale was not related to computer attitudes or a measure of computer anxiety (Oetting, 1983). The scale's reliability was found to be moderately low ($\underline{r}$ = .64). These two studies have initially demonstrated that the Computer Technology Hassles Scale is a measure of a specific type of stress and that this computer-related stress is separate from attitudes toward computers and computer anxiety. Computer-related stress is the stress resulting from interactions with computer technology.

Interest in human-computer interactions has spawned many "computerisms", by-products of, or constructs about these interactions. These "computerisms" may seem at a glance to be similar or related but are possibly operationally distinct. "Computerphobia" is one of these by-products and has been characterized as fear of or resistance to computer technology. Measures of "computerphobia" were developed by Rosen, Sears, and Weil (1987). Since both computer-related stress and "computerphobia" are by-products of human-computer interactions, it would be of value to learn the relationship between the two "computerisms."

The current study was undertaken to determine the relationship the Computer Technology Hassles Scale, a measure of computer-related stress, has to "computerphobia" as defined and

measured by Rosen, et al. (1987).

METHOD

Instruments

A questionnaire was constructed which included demographic questions (sex, age, classification) and questions about exposure to computers, e.g. years used a computer, computer knowledge, etc. Also included were: the Computer Technology Hassles Scale (Hudiburg, 1989b), the somatic complaint items from the Hopkins Symptoms Checklist (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974), and the three scales Rosen et al. (1987) used to assess computerphobia, Computer Anxiety Rating Scale, Attitudes Toward Computers Scale, and Computer Thoughts Scale.

The questionnaire was administered to a sample (N = 109) of undergraduate and graduate students enrolled in psychology and business courses. Subjects were debriefed concerning the purpose of the research after completing the questionnaire.

Results

The demographic and computer exposure questions were tabulated for the subjects (N = 109) who completed the questionnaire and are shown in Table 1. The Computer Technology

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insert Table 1 about here

Hassles Scale was scored by summing the severity level across "hassles", yielding a hassles severity score. A level of distress score was calculated by summing across the somatic complaints. Separate scores were computed for the three "computerphobia" measures according to the scoring guides provided by Rosen et al, (1987). Correlations between the scales and numerically scored information questions were computed. Table 2 includes the

descriptive statistics and correlations between the scales and two of the informational questions: years used a computer and self-rated computer knowledge. The self-rated computer knowledge was on a graded scale from no knowledge (value 1) to knowledgeable (value 7). These two information questions were the only ones that were significant correlations with the scales.

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insert Table 2 about here

The Computer Technology Hassles Scale mean severity score of 45.6 indicates that the respondents in this study indicated higher mean levels of computer-related stress than were found by Hudiburg (1989b) ($\underline{M}$ = 21.6, 17.8). The mean somatic complaints distress score of 29.2 was similar to the means reported by Hudiburg (1989b) (30.7, 32.3). Compared to Rosen et al. (1987), on average the subjects in this study experience a lower level of computer anxiety (87.1 v. range of 91.8 to 108.1) and fewer negative computer thoughts (95.6 v. 104.5), but slightly higher positive attitudes toward computers (88.1 v. range of 84.2 to 86.1).

The Computer Technology Hassles Scale was significantly correlated with somatic complaints ($\underline{r}_{107}$ = .35, $p < .01$), years used a computer ($\underline{r}_{107}$ = .27, $p < .01$)and self-rated computer knowledge ($\underline{r}_{107}$ = .28, $p < .01$). The scale was not significantly correlated with Rosen's et al. (1987) three measures of "computerphobia."

CONCLUSIONS

The present study provides additional support for the Computer Technology Hassles Scale as a measure of computer-related stress. The stress experienced seems to be a result of

human-computer technology interactions and is associated with increased levels of somatic complaints. Persons who have more experience with and knowledge of computers tend to experience more computer-related stress. Evidence was provided in this study that demonstrates the difference between the construct of computer-related stress, as measured by the Computer Technology Hassles Scale, and "computerphobia" as measured by Rosen, et al. (1987).

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Table 1

Demographic and computer exposure information (N = 109)

Gender: Male 44% Female 56%

Age: M = 24.48 , SD = 6.30

Classification: Freshman 25.7% Sophomore 9.2% Junior 21.1% Senior 28.4% Graduate 15.6%

Major: Undeclared 3.7% Humanities 0.9% Social Science 13.8% Sciences 9.2% Nursing 1.8% Math/Computer Science 1.8% Education 14.7% Business 47.7% Computer Information Systems 6.4%

Have you taken a computer course?	Yes - 69.7%
Number of computer courses taken	M = 1.78, SD = 2.25
Have you used a computer?	Yes - 95.4%
Number of years experience using a computer	M = 2.76, SD = 2.72
Current use a computer?	Yes - 50.5%
Average weekly computer use -	M = 2.78 hours, SD = 6.15
Own a computer?	Yes - 22%
Have access to a computer?	Yes - 82.6%
Ever played a video game?	Yes - 97.2%
Self-rated computer knowledge	M = 3.51, SD = 1.60

Table 2

Correlations for Five Scales and computer exposure questions (N= 109)

	Computer Technology Hassles Scale	Hopkins Symptom Checklist	Computer Anxiety Rating Scale	Attitudes Toward Computers Scale	Computer Thoughts Scale	Years used a Computer	M	SD
Computer Technology Hassles-Severity							45.6	37.4
Hopkins Symptom Checklist	.35**						29.2	8.9
Computer Anxiety Rating Scale	.18	.36**					87.1	25.0
Attitudes Toward Computers Scale	-.08	-.15	-.36**				88.1	7.8
Computer Thoughts Scale	-.18	-.26*	-.56**	.42**			95.6	19.0
Years used a computer	.27**	.00	-.20*	.42**	.27**		2.8	2.7
Self-rated Computer Knowledge	.28**	.12	-.21*	.40**	.37**	.62**	3.5	1.6

* $p < .05$
** $p < .01$